

REMARKS

Claims 1-4 are pending in the application, with Claims 1 and 3 being the independent claims. Claim 3 is objected to for informalities. Claims 1, 3 and 4 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lim (U.S. Patent No. 6,628,974 B1) in view of Iwata (U.S. Patent No. 5,723,959). Claim 2 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lim in view of Iwata and Toba (U.S. Patent No. 6,423,392 B1).

A new listing of the claims has been provided with markings removed to overcome the objection to Claim 3.

Claims 1 and 3 are directed to an apparatus and method for method for controlling opening and closing of a folder in a foldable mobile communication terminal having a main body and a sub-body foldably mounted on the main body, respectively. Claims 1 and 3 each recite, in part, a sensor means for detecting a fully open status or a fully closed status of the sub-body with respect to the main-body.

The Examiner relies on position detecting section 50 including position detectors 51 and 52 in Lim for satisfying the claimed sensor means. The Examiner concedes that Lim does not disclose a current sensing unit and a control unit set forth in Claims 1 and 3. The Examiner states that Iwata shows that the recited current sensing unit and control unit are well known in the art, and asserts that it would have been obvious to one skilled in the art at the time the invention was made to combine the teachings of Lim and Iwata.

Lim explains in col. 6, line 60, to col. 7, line 3, that position detecting section 50 includes position detectors 51 and 52 installed on the positions of the power transferring section 20 and the rotating section 10 to face each other, and these position detectors 51 and 52 obtain the same-phase information and apply a specified control signal to the driving

section 11. If the rotating section 10 and the power transferring section 20 have the same phase, the position detecting section 50 detects it, and applies the stop control signal to the driving section 11 to control the driving section 11. Position detectors 51 and 52 merely sense whether the rotating section 10 and the power transferring section have the same phase, and Lim nowhere teaches or reasonably suggests utilizing position detectors 51 and 52 to detect a fully open status or a fully closed status of the folder 2 on the main body 3. Accordingly, Lim fails to teach or reasonably suggest the sensor means as recited in the claims.

Lim only discontinues driving the motor based on a single condition that a position detecting means has the same phase. In contrast, the present invention discontinues driving the motor based on two conditions including (1) where an amount of motor drive current is larger than a predetermined threshold value and (2) that a sensor means senses either one of a fully open status or a fully closed status of a sub-body.

The present invention discontinues to drive a motor on both of the above conditions and, therefore, the present invention can appropriately and more exactly control a closing and opening position of the sub-body.

The present invention is directed to an apparatus and method for controlling opening and closing of a sub-body in an automatically and manually foldable mobile communication terminal. An object of the present invention is to provide an apparatus and method for more efficiently and precisely controlling the position of opening and closing a sub-body of an automatic foldable mobile communication terminal.

Lim is analogous art because Lim describes a cellular phone in which a folder can be opened and closed both automatically and manually. Iwata describes a power window driving control device which moves a window glass of a vehicle in vertical directions by the driving force of a motor. An object of Iwata is to provide a power window driving control

device in which a foreign object is not continued to be caught between a window glass and a window frame even if a foreign object exists on the path along which the window glass is raised.

Iwata describes a motor that is large and includes numerous relays and switches, and effects vertical movement of a window glass. In contrast, the motor of the present invention is small and positioned inside a hinge, and rotates either in a clockwise direction to open the sub-body or a counterclockwise direction to close the sub-body.

Iwata is nonanalogous art because Iwata is not reasonably pertinent to the particular problem with which Applicants were concerned. Evidence of nonanalogy is apparent because Iwata is classified in 318/447 while Lim is classified in 455/575, and because the differences in structure and function of Iwata to the present invention carry far greater weight regarding analogy of Iwata to the present invention. *In re Ellis*, 476 F.2d 1370, 1372, 177 USPQ 526, 527 (CCPA 1973).

For a reference to be applicable to addressing obviousness of the subject matter at issue, the reference must either be in the field of Applicants' endeavor or, if not, then be reasonably pertinent to the particular problem with which the invention was concerned. *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

Furthermore, Applicants again insist that one skilled in the art at the time the invention was made would not have arrived at the present invention based on Lim, Iwata, or any combination thereof, because the skilled artisan would not combine a driving mechanism for a power window in an automobile to prevent crushing an object in the closing window, with a driving mechanism for opening a sub-body of a cellular phone.

The Examiner has failed to establish a *prime facie* case of obviousness for at least these reasons.

Accordingly, independent Claims 1 and 3 are allowable over Lim and/or Iwata.

While not conceding the patentability of the dependent claims, *per se*, Claims 2 and 4 are also allowable for at least the above reasons.

Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicants' attorney at the number given below.

Respectfully submitted,



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